

Toowoomba City Centre Car Parking Strategy 2019

Toowoomba Regional Council

5 November 2019



Gold Coast

Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377

Brisbane

Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442

Sydney

Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

W: www.bitziosconsulting.com.au

E: admin@bitziosconsulting.com.au

Copyright in the information and data in this document is the property of Bitzios Consulting. This document and its information and data is for the use of the authorised recipient and this document may not be used, copied or reproduced in whole or in part for any purpose other than for which it was supplied by Bitzios Consulting. Bitzios Consulting makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or its information and data.

Document Issue History

Report File Name	Prepared	Reviewed	Issued	Date	Issued to
P3675.01 Toowoomba City Centre Car Parking Strategy – Final	B. James / J. Bitzios	S. Brooke	S. Brooke	5/11/2019	Coordinator Infrastructure Technology Systems Toowoomba Regional Council

Toowoomba City Centre Car Parking Strategy

Project: **P3675**

Version: **001**

CONTENTS

	Page
EXECUTIVE SUMMARY	IV
1. SETTING THE SCENE	1
1.1 Introduction	1
1.2 Challenges	2
1.2.1 Population and employment growth	2
1.2.2 Parking Perceptions	2
1.2.3 Cost of parking	3
1.3 Current parking situation	3
1.3.1 Public vs Private Parking	3
1.3.2 Public Parking Supply	4
1.3.3 Parking Capacity and Efficiency	4
2 VISION AND KEY PROGRAMS	6
2.1 Vision	6
2.2 Background	6
2.3 Parking Drivers	7
2.4 Resetting the Policy Direction	7
2.5 Key Programs	9
2.5.1 Strategic Parking Management (KP1)	9
2.5.2 Parking Technology (KP2)	9
2.5.3 Demand Response Parking Pricing (KP3)	10
2.5.4 Precinct Parking Plans (KP4)	10
2.5.5 Parking Demand Management (KP5)	10
2.5.6 Development Parking (KP6)	10
3 KEY PROGRAMS	11
3.1 Strategic Parking Management (KP1)	11

3.1.1	Hierarchical Approach to Parking	11
3.1.2	Framework for Optimising Parking Use	13
3.2	Parking Technology (KP2)	15
3.2.1	Smart Pay Parking Machines	17
3.2.2	Parking Sensors	17
3.2.3	Mobile Apps	18
3.2.4	Smart Parking Signs	19
3.3	Demand Responsive Parking Pricing (KP3)	20
3.3.1	Paid Parking	21
3.4	Precinct Parking Plans (KP4)	22
3.5	Parking Demand Management (KP5)	22
3.5.1	Improve Walking and Cycling Linkages to the City Centre	23
3.5.2	Increase Public Transport Use	23
3.5.3	Bicycle Parking and Shower Facilities	23
3.5.4	Ridesharing Programs (Carpool)	23
3.5.5	Car-Sharing	24
3.5.6	Bike Sharing	24
3.5.7	Electric Charging Facilities	24
3.6	Development Parking (KP6)	25
	KEY ACTIONS	26

Figures

Figure 1:	Number of Centre Public Car Parks
Figure 2:	Paid Parking Efficiency
Figure 3:	Unmanaged Parking vs Managed Parking Scenario
Figure 4:	Parking Management Key Programs
Figure 5:	Centre Parking Hierarchy
Figure 6:	On-Street Parking Framework
Figure 7:	Current Parking Sensors

EXECUTIVE SUMMARY

Council manages around 5,432 car parking spaces across the city centre, comprising 3,535 on-street spaces and 1,897 off-street spaces. This accounts for around one-third of the total city centre parking supply, with around 15,000 parking spaces in private ownership.

Council's role in city centre parking is to manage public parking throughout the city, including regulation and enforcement to maximise its benefit to the community and to regulate the supply of private parking through planning policies. Well managed parking while maintaining access and availability of car parking can bring real benefits to the community, businesses and visitors.

Continuing past trends of increasing parking supply to meet unconstrained demand is unsustainable in the long term and results in increased traffic congestion, and environmental, social and economic impacts. The Toowoomba City Centre Parking Strategy aligns with the Toowoomba Substantiable Transport in promoting sustainable transport solutions while ensuring that everyone has a fair and convenient place to park in the city centre.

The City Centre Parking Strategy has been structured around six key programs that are either managed or influenced by Council and include:

1. Strategic Parking Management
2. Parking Technology
3. Demand Responsive Parking Pricing
4. Parking Demand Management
5. Precinct Parking Plan
6. Development Parking.

Strategic Parking Management will ensure the highest and best use of parking that supports the city centres economic prosperity. Maintaining acceptable levels of accessibility and turnover of car parking close to the city centre is essential for businesses that rely on customer parking. These spaces will be managed by shorter time limits and paid parking. Further out from the centre, time limits will be increased to provide for long stay needs. All parking within 10-

15 minute walk of the city centre will be paid parking. The balance of the Traffic Area (or outer area) will provide for long-stay parking needs. This area will predominantly be 8P free parking with select pockets of short stay (1P to 3P) to assist with customer parking for businesses in the city frame.

Council will invest in **Parking Technology** to maximise customer experience and assist the city's management of parking. This will include investing in new smart pay parking machines that provide multiple payment options such as pay by phone, extending the coverage of parking sensors, a smart phone app and new real-time digital parking signage.

Parking occupancy levels will be continually monitored through the parking sensors, and parking pricing will be reviewed and adjusted more frequently. **Demand Responsive Parking Pricing** will provide a better balance of parking across the city centre with target occupancy rates between 65% and 85%. It does this by reducing the cost of parking in quieter streets and increasing the cost of parking in busier street, adjusting pricing according to demands throughout the day and week.

Precinct Parking Plans will be developed for key areas on the fringe of the city centre such as the Toowoomba Base and St Vincent Hospital and Queens Park. Precinct Parking Plans follow the Parking Strategy's goals and objectives but have their own strategies and actions tailored to the specific issues and opportunities for each precinct.

Parking Demand Management initiatives reduce the number of vehicle trips, reduce the number of vehicle trips entering and exiting the city centre, without reducing the number of person trips. This in turn reduces the amount of parking supply required for these vehicles.

Development Parking has a significant influence on transport access, amenity and traffic impacts of a centre. Parking rates for development will be periodically reviewed so that the quantity of parking provided by development matches the demand generated by that development. Opportunities to improve private parking efficiency through decoupling and/or shared use of underutilised council parking will be explored further.

A five-year implementation plan sets the key actions and indicative timeframe to deliver the Toowoomba City Centre Parking Strategy.

1. SETTING THE SCENE

1.1 Introduction

Council released its first Parking Strategy in 2014. The key driver for the 2014 Parking Strategy was parking supply, ensuring there was enough short, medium and long-term supply to meet forecast parking demands in the city centre area

At that time there were number of significant city-building projects planned for the Toowoomba city centre at that time. The short-term actions focussed on providing adequate supply and turnover of parking spaces, as well as the efficient management of construction worker parking in the city centre during this building period.

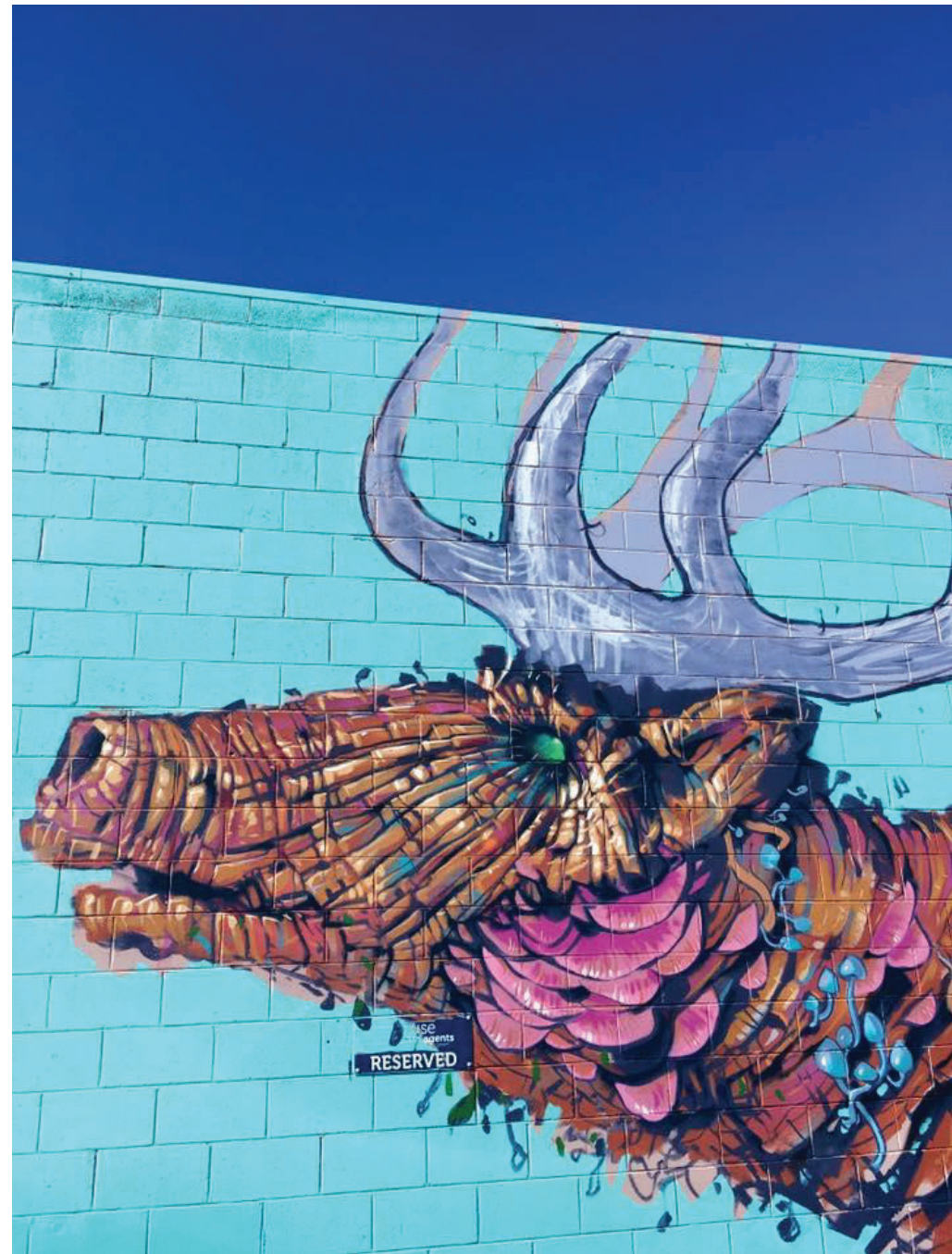
Most of these projects are now complete, including the development of the Grand Central shopping centre with over 2,000 parking spaces.

The long-term actions supported the development of the land use and transport system towards a more sustainable future. It was based on proactive intervention rather than waiting for the transport system to evolve and deciding which parking measures to adopt.

Moving forward the new Parking Strategy needs to be supportive of broader transport objectives for an accessible and sustainable city.

The new Parking Strategy is delivered in the following sections:

- *Setting the scene – outlines parking challenges, the current situation and the opportunities from new technologies and best practice policies.*
- *Vision and objectives – show how the Strategy supports economic productivity and sustainable transport and land use, building on the Sustainable Transport Strategy and the City Centre Master Plan*
- *Key programs – describes the programs to deliver the Vision and Objectives:*
- *Action areas – details the actions to achieve the Strategy's objectives.*



1.2 Challenges

Car parking significantly influences the choices people make regarding trip destination and travel mode. Because cars and fuel have been comparatively cheap and parking has been abundant, the transport system and land use in Toowoomba, as elsewhere in Australia, have evolved with a focus on providing vehicle access and enough parking area rather than as places configured primarily for people. Toowoomba residents and visitors have become accustomed to easily accessible and cheap parking. However, with land supply rapidly reducing, land values escalating and traffic congestion growing, the unrestricted provision of new parking and the management of existing parking must be carefully reconsidered.

Unrestricted parking encourages more people to drive, leading to environmental issues such as increased noise and air pollution and increased emissions. Restricted parking can be used as a lever to move to more sustainable transport modes (bus, train, walk, cycle etc.) and to decarbonising the transport sector.

1.2.1 Population and employment growth

By 2020, Toowoomba Region will have more than 170,000 residents and around one million domestic visitors each year, and the population is expected to increase to almost 200,000 by 2036. Private vehicles are used for 85% of trips to work in Toowoomba compared to around 2% on public transport and 5% walk or ride to work. This growth along with car dominance will continue to add pressure to the city's parking.

The City must manage a finite amount of road, kerbside footpath space and off-street parking areas with increasing demands for better amenity, access and mobility. There are also demands for better and wider footpaths, footpath dining, streetscaping and landscaping, cycling facilities (e.g. protected cycling lanes), the need for driveway access, bus zones, loading zones, disabled bays, taxi zones and parking, increasing vehicle traffic, dedicated turning lanes, slip lanes and space for pedestrian crossings. Furthermore, competing issues such as people walking and cycling, the rise of rideables and bikeshare/scooter stations along the kerbside impact access and mobility around the city centre. These valid demands need to be balanced with parking. Inefficient kerbside and

parking management increases traffic congestion. 'Cruising' for parking in busy periods congests local streets and reduces amenity, economic activity and productivity.

1.2.2 Parking Perceptions

A parking occupancy audit in 2018 revealed that:

- All-day workers fill most of the central and eastern off-street CBD car parks by 9am, which results in a lack of parking for casual workers
- The western CBD car parks are not utilised to capacity

The audit also found that:

- *shoppers are often hesitant to travel into the CBD for long periods of time due to a seeming lack of accessible and/or affordable parking*
- *workers within the CBD have the perception that they 'should not have to pay' for parking, as this should be a given asset in any workplace.*
- *business owners welcome increased numbers of offices, residents and adjacent businesses to encourage more passing traffic. However, they were concerned with the potential for increased congestion if this additional traffic is not catered for within the road network and parking catchment*

The surveys indicate that there is a large cultural perspective that parking should be free throughout all of Toowoomba's CBD.

Recommended options to address these concerns were:

- **Communication and Education:** Communication and collaboration with business to change worker's car parking behaviour
- **Smart Parking:** Enhance the car parking experience using technology including mobile phone apps and integrated smart parking systems
- **Re-zoning:** Putting a time or money cost on premium car parking in the centre of the CBD whilst providing other cost options further out.

1.2.3 Cost of parking

There is a perception that parking should be free, however costs are indelibly associated with 'free' parking. When a person parks their car, there are hidden costs. These costs, while often significant, are rarely legible or transparent. They tend to be incurred indirectly by the user or purchaser of goods and services or by third parties, i.e. ratepayers or taxpayers.

There could be costs to personal safety, economic productivity or streetscape improvements. It is unfair and inequitable that everybody pays for the motorist to park cars in public space for free. Everybody experiences a cost to park their car at some point.

However, the reality is that Council does provide free parking in many places. It is the high demand areas, such as the city-centre that we are need to manage.



1.3 Current parking situation

1.3.1 Public vs Private Parking

Council is perceived to be the main parking provider in the Toowoomba City Centre, however in reality Council only manages about 1/3 of the city-centre's total parking supply. This means there is around 15,000 parking spaces are privately owned. Some of these publicly available while others are 'reserved'.

Council provides and maintains parking facilities as a community service to improve road safety, traffic safety and pedestrian safety, user convenience, and environmental and residential amenity. Its current role in parking covers a range of responsibilities but can be broadly categorised as managing the supply and use of parking as follows:

- Supplying and maintaining public on and off-street parking facilities throughout the city
- Regulating and enforcing the use of this public parking through time limits and pricing
- Regulating the supply of private parking through the Planning Policies, which requires developments to provide a certain number of car park spaces.

1.3.2 Public Parking Supply

There are around 5,432 car parking spaces within the Toowoomba 3P Central Traffic Area, excluding private parking, 2/3 of which are on-street and the rest provided in off-street parking (Figure 1). Private parking including basement parking and shopping centres (e.g. Grand Central) would significantly add to this supply.

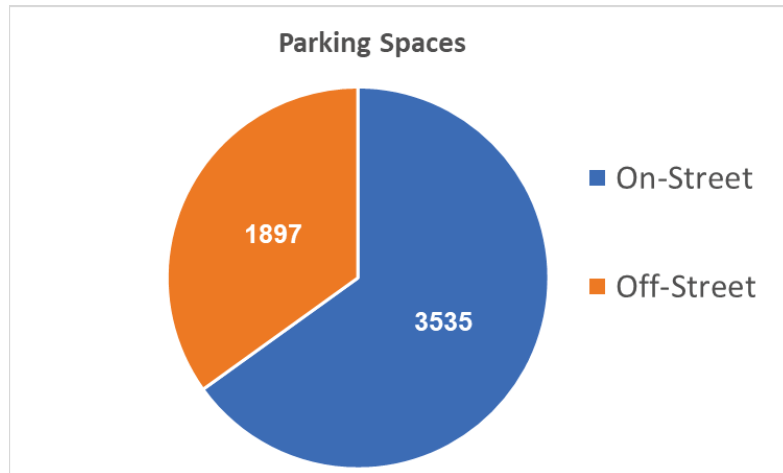


Figure 1: Number of Centre Public Car Parks

This parking is made up of short-stay (5 minutes to 2 hour), medium-stay (3-4 hour) and long-stay (8-hour +) parking. For on-street parking, short-stay represents around 73% of the supply while around 22% is long-stay. Most of Council-controlled off-street spaces are long-stay (8P) but also include a small allocation of medium stay (3P) parking spaces.

Unpaid car parking accounts for around 33% of the on-street parking supply. There are six Council-controlled off-street parking facilities which are paid parking and have all-day parking fees ranging from \$3.00 to \$7.50 per day.

1.3.3 Parking Capacity and Efficiency

Car parking toward the fringe of the city centre has more spare capacity compared to the parking closer to the core centre.

Based on the 2014 parking surveys, within the city core, free '1-hour' and '2-hour' parking typically operates at capacity whereas metered '1-hour' and '2-hour' parking operates with an average 60% capacity. Furthermore, long-term on-street parking within the city core generally operates at capacity.

There is a clear trend of spare capacity at the fringe of the city centre, in areas that involve a longer walk into the core centre. Areas of high demand and limited capacity are typically on streets with unlimited time restrictions and low costs in proximity to the core centre. This is because the core centre is where most commercial and retail services are located.

Paid parking data (excluding single head meters), for 2018, was used to develop an efficiency score for paid parking areas in the city centre. This analysis considered the number of parking transactions (tickets purchased) in a day for parking metered spaces and compared this against the assumed optimal parking turnover for each time-limit. The efficiency score is then calculated on how the parking spaces compare to the optimal daily turnover. The results are shown in Figure 2.

What this is showing, is that paid parking is working efficiently in some areas, but inefficiently in other areas. For example, parking along Water Street and west of the Water Street car park show a very low efficiency score. As these spaces are paid all-day, it would suggest a low demand for parking, the perception that the cost of parking in these areas are too high, or high levels of non-compliance (i.e. failure to pay).

Conversely, parking close to the city centre shows moderate to high efficiency scores, indicating a higher demand and more compliant parking.

It is clear from this analysis that parking efficiency is highest towards the city centre and lowest around the fringes of the city centre. One of the key challenges moving forward will be to improve the management of parking so that parking efficiency is balanced across the 3P traffic area.



Figure 2: Paid Parking Efficiency

Toowoomba City Centre Car Parking Strategy

Project: P3675

Version: 001

2 VISION AND KEY PROGRAMS

2.1 Vision

Parking is managed to promote sustainable transport solutions while ensuring that everyone has a fair and convenient place to park in the city centre.

2.2 Background

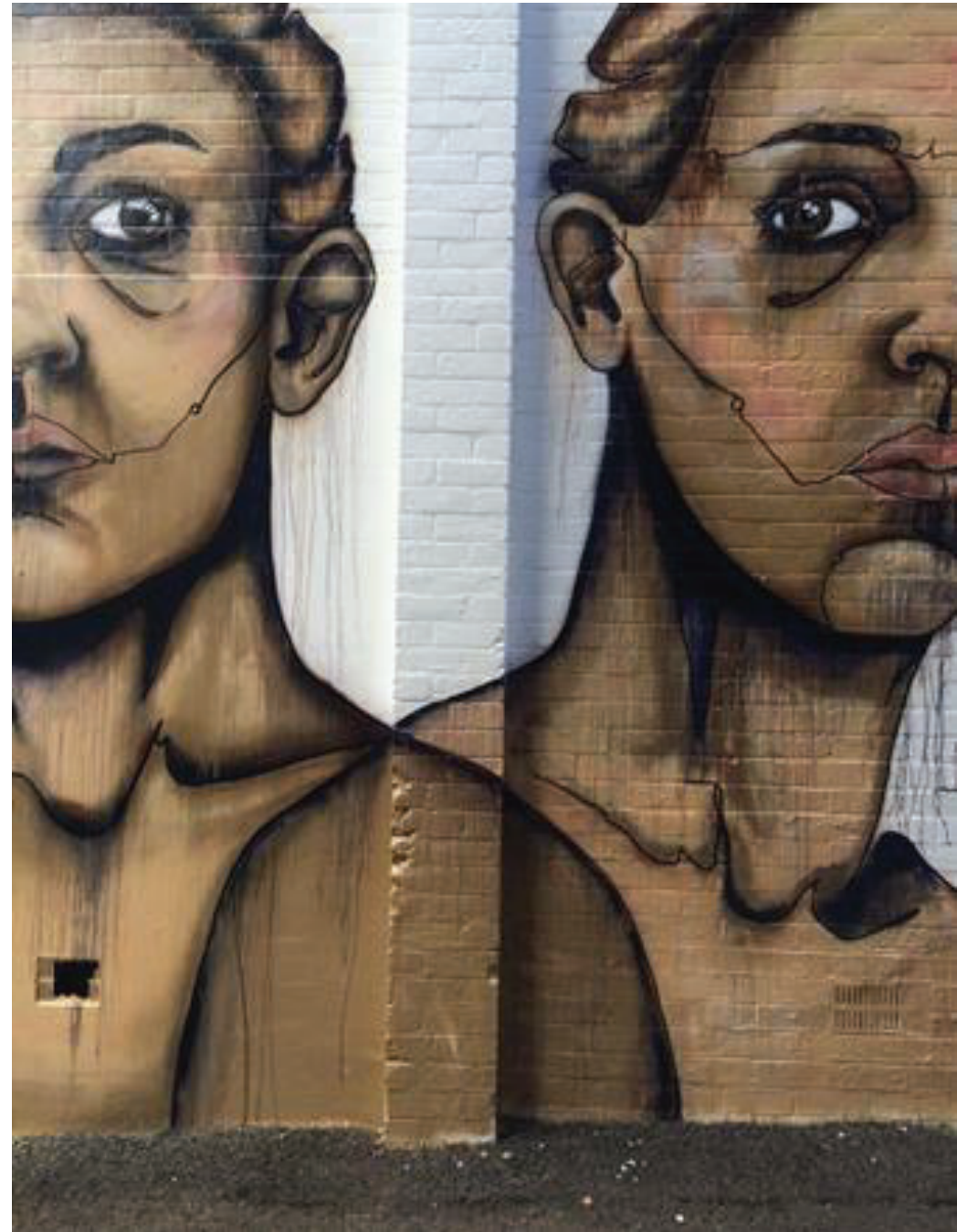
The Sustainable Transport Strategy (STS) overall vision for transport in Toowoomba is:

A well-planned and managed integrated transport system that supports regional economic growth, provides safe and equitable transport options to support the development of healthy and happy communities, and protects the culture and heritage of the region while minimising negative impacts of transport on our natural resources.

Parking plays a pivotal role in ultimate success of the transport strategy. The STS predicts that:

If we don't manage parking demand by 2031, the need for additional parking in the CBD will require an area the size of Queens Park to be set aside for car parking. In addition to this, the required road widening to accommodate extra traffic will significantly impact on the amenity of our city and increase the cost of development in Toowoomba.

Parking policy needs to be supportive of the broader transport objectives for an accessible and sustainable city. In other words, parking should not be the 'tail that wags the dog'. Without a consistent and supportive parking policy it may be virtually impossible to achieve the STS goals and objectives such is the influence of parking.

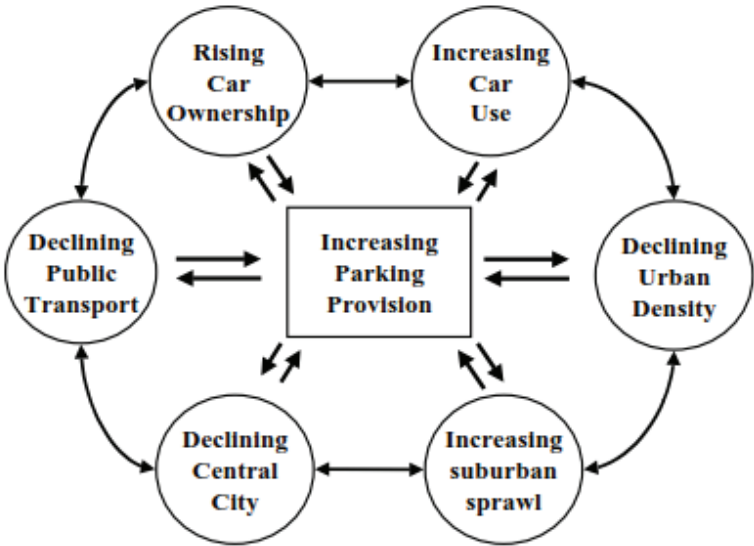


2.3 Parking Drivers

Parking availability and cost are two of the most important factors that influence the decision of whether to drive or choose other transport modes for any trip. A greater availability and reduced cost generally encourage more people to drive, commonly resulting in negative consequences such as congestion, pollution, reduced amenity appeal and inefficient performance of the transport network.

Previously, increased parking demand has been met with increased parking supply, hence resulting in increased traffic, congestion and greenhouse gases emitted throughout the city centre. The reason for this is that each newly supplied car space equates to at least one additional trip into and out of the city centre.

Another driver is the issue of increased car parking impacting the urban form and design of the city centre. As car parks continue to be built further away from the core centre, travel times from car park to destination will increase.



Source: ARRB Group

As the city centre densifies and grows, the cost of land (whether privately or publicly owned) rises. This land cost directly affects the cost of car parking provision both for on-street and off-street parking.

2.4 Resetting the Policy Direction

Possible policy options and implications include

Option1 Unconstrained Parking	Maintaining the current approach to parking where additional parking spaces are provided as demands dictates. Parking costs remain unchanged in real terms with no change in the centres that have pay parking
Option 2 Heavily Constrained Parking	No additional parking supply. Targeted parking strategies to reduce demand for parking by encouraging mode shift away from private cars. Significantly increase parking prices to reflect the actual costs of supply and to effect behaviour change. The current pay parking areas would
Option 3 Customised Parking	Additional parking supply is limited to meeting the growth in short-stay parking demand with increased prices to reflect the local value of the parking space. Parking supply management in the city centre will be managed to balance demands across the centre.

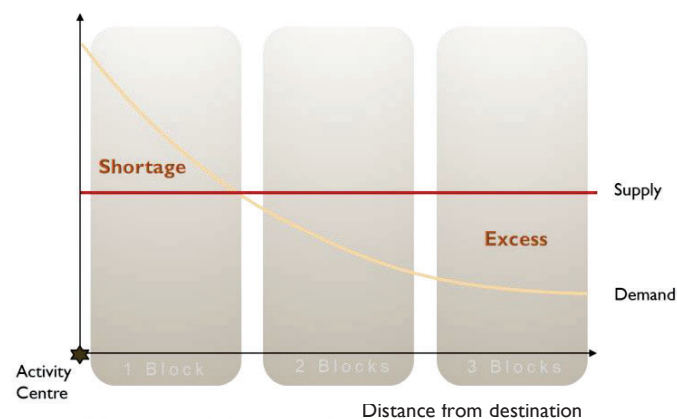
When parking is unconstrained with limited regulations, there are often areas close to the activity centre with a shortage of car spaces and areas further away from the activity centre with an excess of car spaces (unmanaged scenario). On the other hand, constrained parking (managed parking scenario) solution uses up to date (or real-time) data and adjusts the available parking control levers (i.e. price, time-limit, time-period) to influence driver decisions on where and when to park resulting in a more evenly balanced parking outcome. Moreover, parking is one of the city’s largest assets, and should be appropriately dealt with from an asset management approach.

Figure 3 illustrates the outcomes of an un-managed parking scenario compared to a managed parking scenario.

Some of the effects that parking policy changes can have on Toowoomba's city centre include:

- Capping the supply of car spaces to encourage the use of alternate travel modes, and reduce congestion and greenhouse gas emissions in the city centre
- Encouraging higher turnover and hence greater availability of bays and less parking circulation time/impacts
- Reducing 'over-stay' of short-term spaces
- Reducing parking demand by encouraging greater public transport, walking and cycling use
- Increasing parking bay availability hence increasing the ease of access and trade for local businesses
- Diverting some trips to areas of the city centre that are quieter and do not have a parking charge or as high of a parking charge
- Improving parking facility design and operation, to enhance user convenience and safety

Un-managed Scenario



Managed Scenario



Figure 3: Unmanaged Parking vs Managed Parking Scenario

2.5 Key Programs

Six key parking management programs have been formed through a review of the 2014 Toowoomba City Centre Car Parking Strategy and Sustainable Transport Strategy, and parking data.



Figure 4: Parking Management Key Programs

2.5.1 Strategic Parking Management (KP1)

Principle #1 - Take a precinct hierarchy approach to parking management to ensure the highest and best use of the city's parking asset.

Principle #2 – Establish high turn-over customer paid parking nearest to the city centre core, with areas between the city centre core and city frame having longer parking times.

We will do this by:

- Managing parking as an asset to provide the highest economic value to the city and making the best use of the available parking
- Maximising the availability and convenience of parking by encouraging high turnover in the core with low turnover off-street or in the city frame
- Providing equity and fairness in parking through allocation of parking time limits and pricing policy
- Enforce parking regulation to reduce the number of people illegally parking or over-staying parking time limits.

2.5.2 Parking Technology (KP2)

Principle #3: Employ best practice technology to maximise customer experience and assist the city's management of parking

We will do this by:

- Improving customer service and parking management using real-time/place data to inform where and when to find the right car park
- Integrating technologies to co-ordinate the management of parking operations, enforcement and communication
- Providing convenient pay parking options including pay by phone, credit card and coins, including the ability to top-up
- Improving the collation, analysis and dissemination of information related to parking to better inform parking management decisions
- Use technology such as automatic number plate recognition to improve the effectiveness and efficiency of parking enforcement.

2.5.3 Demand Response Parking Pricing (KP3)

Principle #4: Monitor and adjust parking pricing to achieve optimal and balance parking occupancy across the city centre.

We will do this by:

- Using technology to continually monitor parking occupancy levels to informing pricing policy
- Using a consistent and transparent approach to pricing that reflects demand by location and time of day
- Adjusting parking prices to keep occupancy levels below capacity and evenly balanced across the city centre

2.5.4 Precinct Parking Plans (KP4)

Principle #5: Manage parking demand and impacts with improved local amenity

We will do this by:

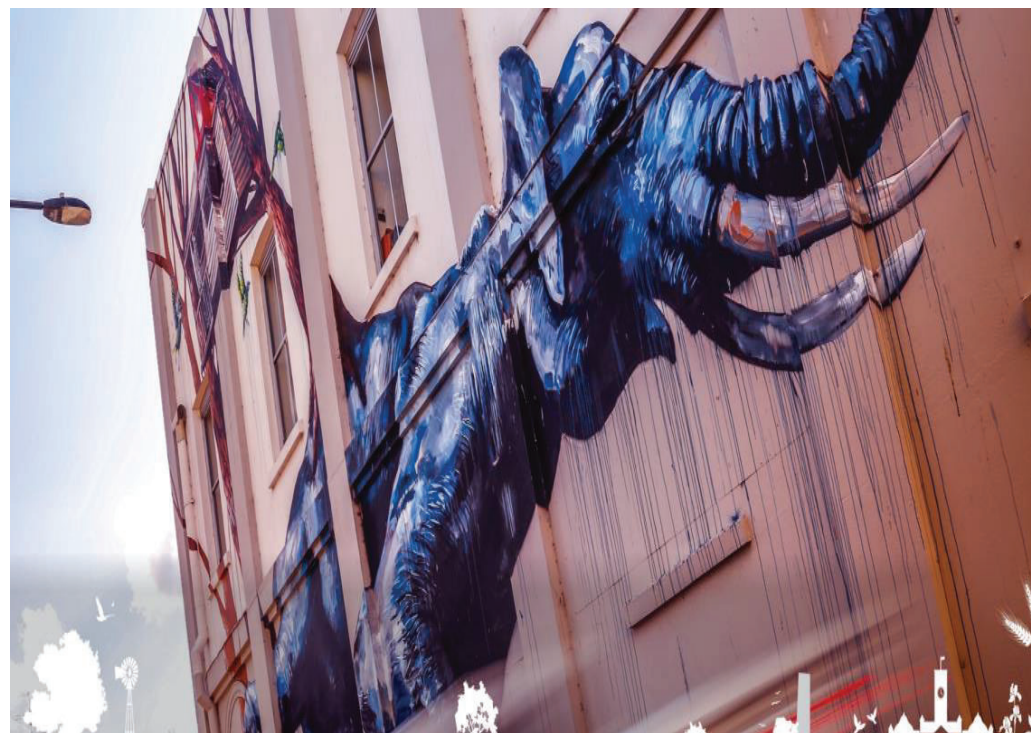
- Understanding location demands and specific issues
- Supporting local access and mobility needs
- Recognising that local-specific parking demands and impacts may differ from that experienced in the city centre

2.5.5 Parking Demand Management (KP5)

Principle #6: Reduce the demand for parking through encouraging alternative travel modes

We will do this by:

- Supporting alternatives to single-occupancy car trips through policy and infrastructure initiatives
- Reducing the number of vehicle trips entering and exiting the city without reducing the number of person trips
- Supporting active and public transport alternatives through advocacy, policy, education, engagement and infrastructure initiatives



2.5.6 Development Parking (KP6)

Principle #7: Ensure developments contribute to parking outcomes in the city centre

We will do this by:

- Ensuring development parking supply meets the needs without impacting on the surrounding streets and residential areas
- Exploring potential to decouple parking from developments through parking on other sites and/or leasing (guaranteed) parking spaces in Council's off-street parking facilities where these spaces are underutilised.

3 KEY PROGRAMS

3.1 Strategic Parking Management (KP1)

3.1.1 Hierarchical Approach to Parking

A hierarchical approach takes a centre-wide perspective to parking management rather than considering parking at a street-by-street level. This process values the parking asset and prioritises its allocation to support centre growth and intensification and in recognition of different user priorities.

The highest value parking is closest to the centre which in turn should be used by those who would bring the most value to the business in the centre. Short-stay time limits with pay parking will ensure that parking spaces turnover regularly and spaces are available for customers to the city centre.

Moving to the outer area priority is given to residential parking and medium-long term parking. Areas between the city centre core and city centre frame will have longer time restrictions and areas outside of the city centre frame will have no restrictions. People are encouraged to park outside the city centre and travel via public and/or active transport.

These hierarchy considerations also account for trip length. A five-minute walk trip from a car park in the context of an eight-hour workday is different to the needs of a 15 minute “drop in” trip where parking in close proximity to the destination is of greater value.

Figure 5 shows the intended parking hierarchy for Toowoomba City Centre. This contains a central core that will prioritise short-stay parking. All on-street parking in this 5-6minute walking catchment zone will be paid parking and time-limited to between one and three hours (except for the Annand Street and Bus Terminal off-street parking facilities) to encourage accessibility and turnover for customer access to businesses.

All parking within the 10-15minute walking catchment will be paid parking. While most of this zone is already paid parking, there is around 1,100 free parking spaces close to the city core. Parking data analysis show a high level of overstay



and city centre workers shifting between these spaces resulting in reduced accessibility for customers to the centre. These free spaces will be converted to pay parking to improve accessibility and turnover of these parking spaces.

The balance of the Traffic Area (or outer area) will provide for long-stay parking needs. This area will predominantly be 8P parking with select pockets of short stay (1P to 3P) to assist with customer parking for businesses in the city frame.

Key Action:

- 1-1. *Adopt centre parking hierarchy*
- 1-2. *Prioritise parking based on highest benefit and user needs*
- 1-3. *All on-street parking in this 5-6minute walking catchment will be time-limited to one to three hours parking*
- 1-4. *All parking within the 10-15minute walking catchment will be paid parking*

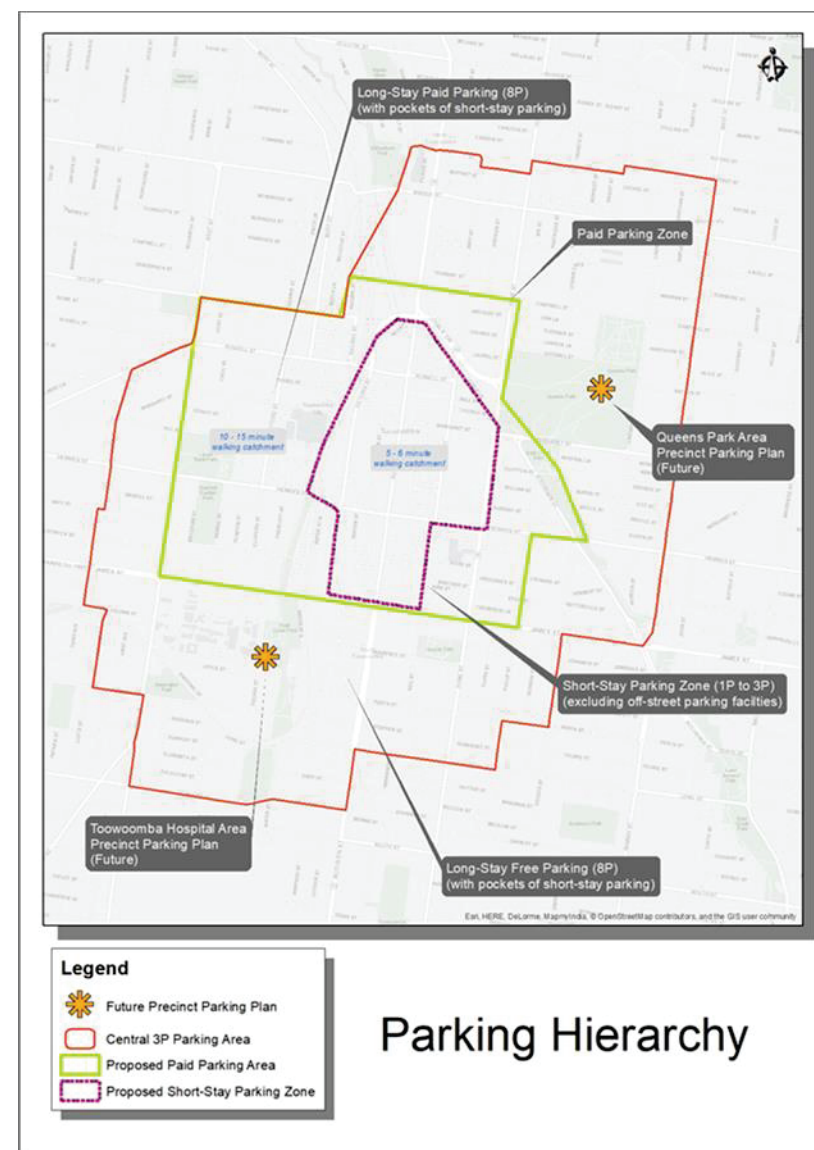


Figure 5: Centre Parking Hierarchy



3.1.2 Framework for Optimising Parking Use

The framework in achieving an ideal parking occupancy rate for on-street parking is as shown in Figure 6. The framework identifies the ideal solutions corresponding to the occupancy rate of the existing parking area. This may be successful in achieving the ideal occupancy and to be in line with the Toowoomba's parking paradigms. Parking facilities should be used efficiently, so car parks at a destination may often fill provided that alternative options are available nearby, and travellers have information on these options. Planning includes shared parking, pricing and other regulation, information, and walkability improvements".

Key Actions:

- 1-5. Set target level of service for public parking at 85% occupancy for on-street parking and 90% for off-street parking

The strategy primarily works as a "blanket" rule that is later revised to fit the characteristics of the precinct based on:

- Walking distance to the "trip" attraction/destination. The lesser the walking distance the more willing a user is in paying a higher fee;
- Generally, in a heavily utilised and congested area such as a commercial area, the strategy aims to encourage higher turnover to generate more parking availability to the businesses and to boost the local economy;
- Parking supply vs demand in identifying the shift in parking behaviour after parking restriction is changed;
- Overflow parking areas to be managed to maintain the parking occupancy; and
- The context of the area and the desired duration of stay to support the local economy.

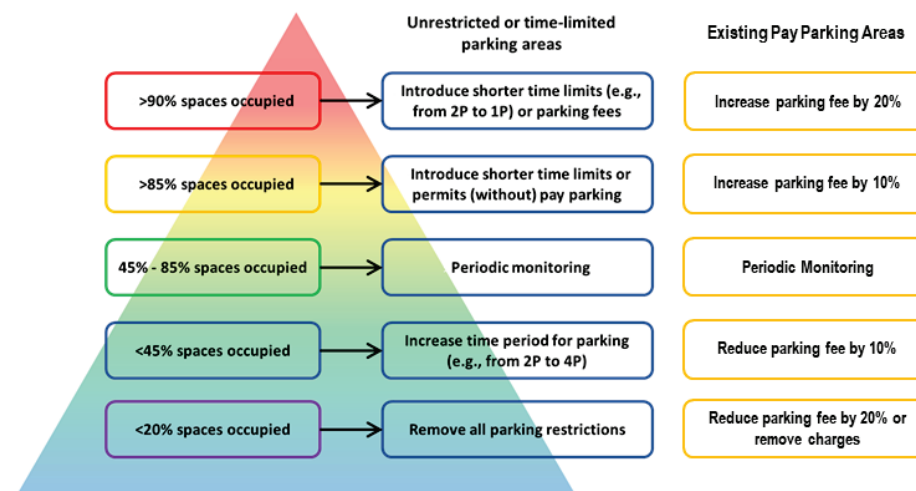


Figure 6: On-Street Parking Framework

Main Street Parking



Parking Occupancy

Average parking occupancy data was collected from parking sensors for the month of September 2018. This shows very high utilisation (more than 85% of spaces occupied on average) for the two-hour central parking on Margaret and Ruthven Street and Duggan Street. When parking occupancy exceeds 85% customers will find it difficult to find a parking space close to their destination and more congestion as driver search for available parking.

By comparison, the one-hour timed kerbside parking is working efficiently (50%-85% occupancy) meaning that on average spaces will be available for customers when they arrive.

Turnover comparison

Parking turnover is the average number of unique cars that use a particular car parking space in a day, also known as parking chum. The higher the value the more often the space is used.

The kerbside parking along Margaret and Ruthven Streets generates higher parking turnover compared to the centre parking, noting this would also be due to the shorter time-limit. There is low parking turnover, and high occupancy for the centre parking on Ruthven Street south of Little Street. This would suggest that the parking is being used by city-centre workers rather than business customers. Similar results can be seen along Duggan Street and Little Street.

Recommended Parking Management

1. Retain the current time-limits to maintain a mix of parking durations for customers.
2. Introduce paid parking to increase parking accessibility and turnover of spaces, and to discourage long-stay and park shifting in these high-value spaces.
3. Introduce a first 15-minute free period so that short drop-in trips to the city centre are encouraged and not disadvantaged by cost.



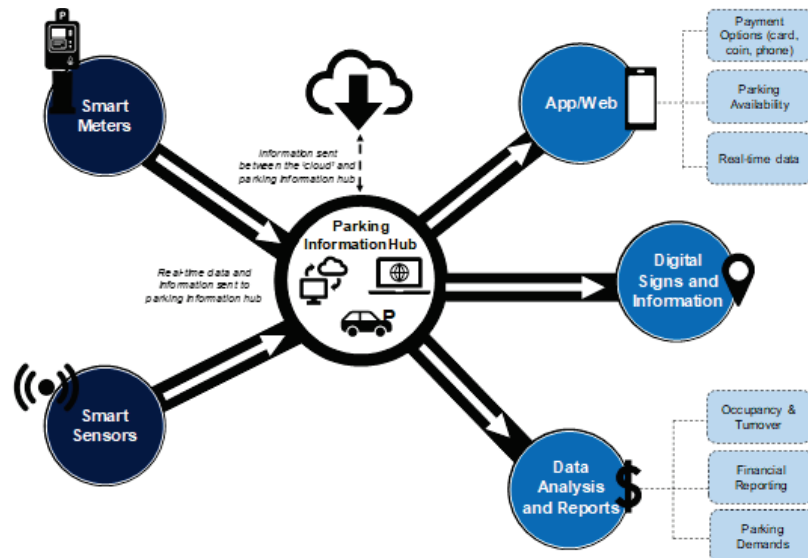
3.2 Parking Technology (KP2)

Parking technologies and their connection to one another will play a key role in managing parking demand and efficient movement in Toowoomba.

A connected network of sensors and parking meters will provide real-time data to mobile apps that allow users to monitor available and unavailable parking spots and provide this active data to parking guidance signs.

Smart Parking will be implemented through a number of measures

- New parking meters
- Parking Sensors
- Mobile Phone Apps
- Digital Guidance Signs



Benefits that smart parking will provide include:

- Accurately sense parking space occupancy in real-time
- Guiding customers to available parking spaces
- Optimising the use of parking spaces
- Simplifying the parking experience for customers
- Reduce time spend searching for a car space
- Less congestion and CO2 emissions
- Real-time monitoring of parking activity
- Enabling informed parking management decisions through real-time and historical analysis of data

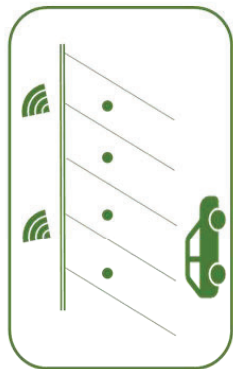
Smart Parking



Smart Parking machines

New pay-parking machines will:

- ✓ Provide multiple payment options
 - ✓ Credit Card
 - ✓ Coin
 - ✓ Pay by phone
- ✓ Linked to mobile apps
- ✓ Have paper and virtual tickets
- ✓ Provide a single reporting system for better management



Parking Sensors

Over 4,000 new parking sensors will provide real-time parking data and will:

- ✓ Up to date information on available parking spaces through a new smart phone app and smart signage
- ✓ Improve efficiency and accuracy of parking data for better parking management
- ✓ Improves monitoring of parking activity and enforcement efficiency



Parking Management

A new central management platform will be connect to:

- ✓ Improved monitoring of parking activity
- ✓ Data analytics
- ✓ Provide better informed parking decision
- ✓ To provide the most efficient and effective use of the city's parking asset



Smart Phone Apps

A new phone app will provide:

- ✓ Real-time information on available parking
- ✓ Directions to parking spaces
- ✓ Provide payment options
 - ✓ Pay by phone
 - ✓ E-card payment
- ✓ Alerts
- ✓ Top-ups
- ✓ Virtual tickets

Smart Parking Signage

New digital parking signage will provide:

- ✓ Real-time parking information
- ✓ Linked to parking sensors
- ✓ Improves wayfinding to free parking spaces and reduces congestion



3.2.1 Smart Pay Parking Machines

The city currently operates four different parking meter systems, including single head meters. Some machines only accept coins while others also except payment by card. None of the machines are connected and each have their own reporting systems and maintenance arrangements.

New smart machines will now offer flexible payment options (phone, coin, secure card payments) and more flexible tariffs. Linked to a smartphone app will enable users to pay for parking, receive reminders before the parking payment expires, and pay for extra parking time without having to return to vehicle.

These parking machines should also include multiple pay options and be connected using a mobile App (which allow for card payment, coin payment, top ups, alerts and planning).

Key Action:

- 2-1. *Roll-out new parking meters across the centre-centre, starting with the “paid parking” zone*



3.2.2 Parking Sensors

A parking sensor is a small electronic device that is installed in the ground to detect and record the time a car arrives in, and departs from, a parking bay. Each parking bay is fitted with its own sensor.

The sensors collect valuable information on how often parking bays are being used on any given day or part of the day. This provide Council with a better understanding of the city’s ongoing parking needs and helps with future planning.

These sensors will feed real-time data on occupied and unoccupied parking spaces to central hub linked to web/mobile phone apps and new parking guidance signage so that customers can quickly source where they can park.

Sensors offer a more consistent and accurate approach to parking management by encouraging drivers to comply with parking restrictions. This supports the steady turnover of parking spaces and helps to make on-street parking more readily available for shoppers, visitors and residents.

It also ensures the limited supply of on-street parking is managed in a fair and equitable manner for the high number of vehicles in the city each day.

Parking sensors have already been installed on sections of Toowoomba’s city centre streets to assist in the enforcement of time-limited parking spaces. Expanding the sensor placement will increase the coverage and frequency officers can enforce, and with that increase, the level of compliance across the coverage area. The location of the existing sensors throughout the city centre are shown in Figure 7.

Key Action:

- 2-2. *Expand the existing parking sensor deployment across the city centre, commencing with the designated short-stay parking zone, and paid parking zone. Further expand parking sensor to the 3P traffic area, as funding permits.*

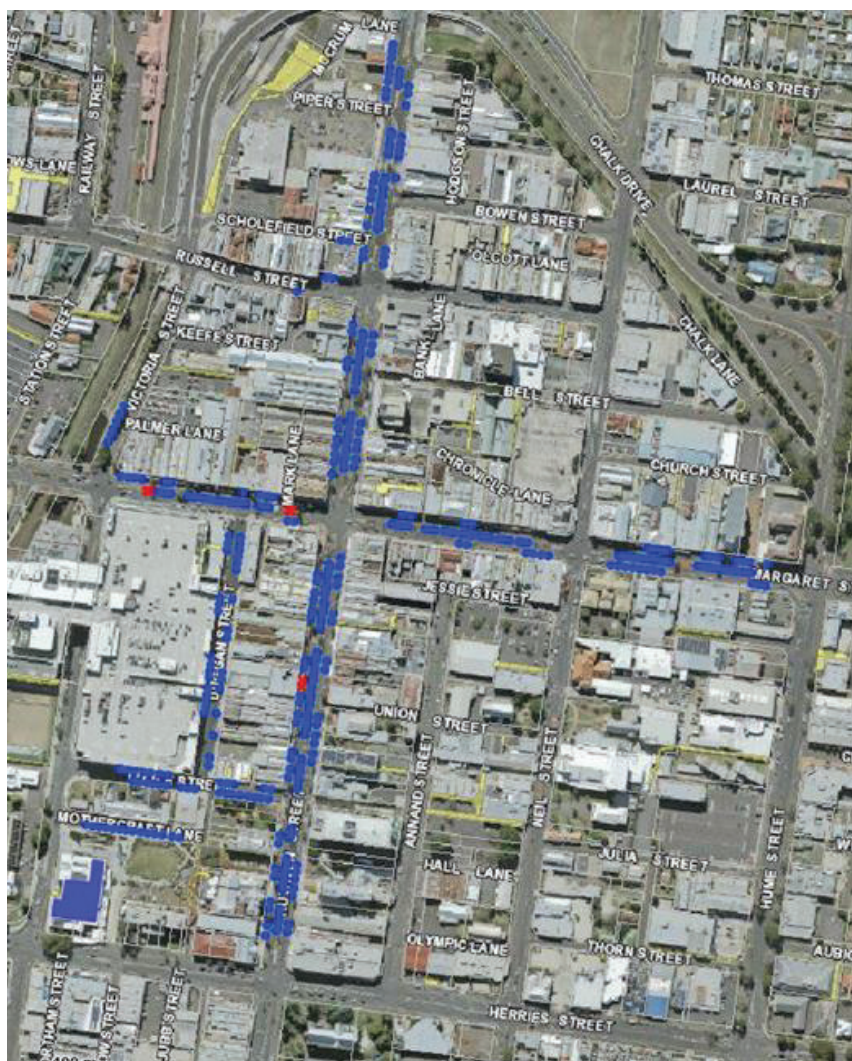


Figure 7: Current Parking Sensors

3.2.3 Mobile Apps

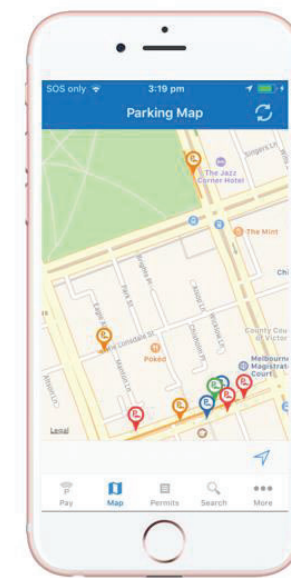
Mobile apps as a smart parking tool is quickly emerging throughout Australia. Mobile apps can be integrated into pay-by-bay and pay-by-plate, where a person pays by phone functionally. Payment via mobile app typically requires entering debit/credit card details, parking bay number or number plate details and a 'parking zone' code. This is convenient for drivers as the app sends alerts for overstay and there is opportunity for future integration to navigate drivers to unoccupied spaces.

This mobile parking app will enable users to:

- display and navigate to available parking spaces, via your device maps
- get accurate real-time information about available parking bays and time limits
- pay for your parking on your smart device
- receive alerts when your parking session is about to expire
- remotely 'top up' your parking session to the maximum time limit

Key Action:

- 2-3. *Facilitate online tools and smart phone apps to help customers pre-plan and manage their parking*



3.2.4 Smart Parking Signs

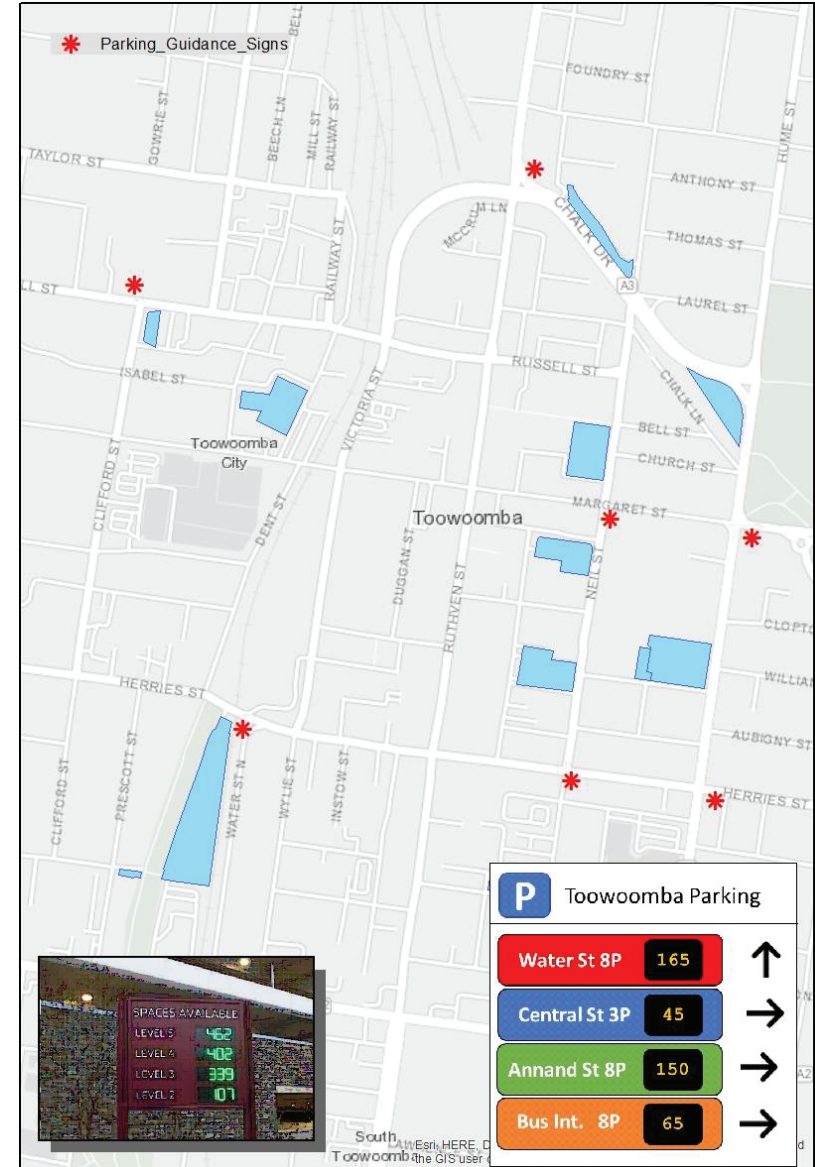
Smart parking signs can be connected with parking sensors at various car parks across the city to display parking availability. The live status of each parking space is transmitted from parking sensors to a central control system which in turn updates variable message signs in strategic locations.

The parking variable message signs provide directions to off-street parking facilities and display how many spaces are available, in real time. This informs drivers of the number, type and location of available spaces, along with direction indicators to keep traffic flowing. This type of technology is common in city centre across Australia and provides a number of benefits, including:

- minimising the time spent searching for available parking
- providing directional information for tourists and visitors
- helping limit the volume of 'circulating' traffic searching for parking within the centre
- reduction in pollution due to less circulating traffic
- improving visitor/user experience when arriving to the centre, assisting in a 'smooth' experience to reach a destination

Key Action:

- 2-4. *Roll-out smart parking signage to all off-street parking facilities in the city centre*

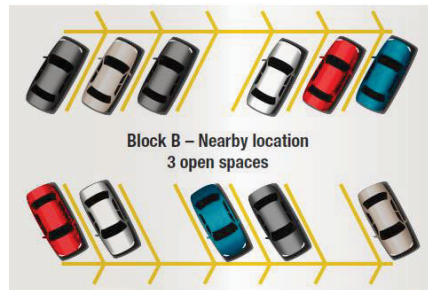
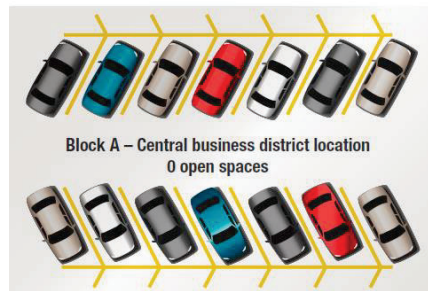


3.3 Demand Responsive Parking Pricing (KP3)

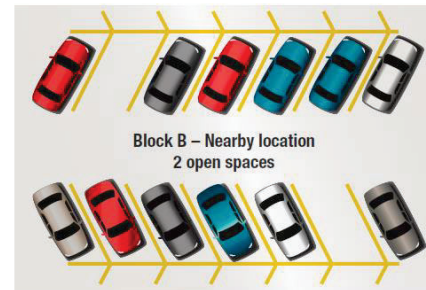
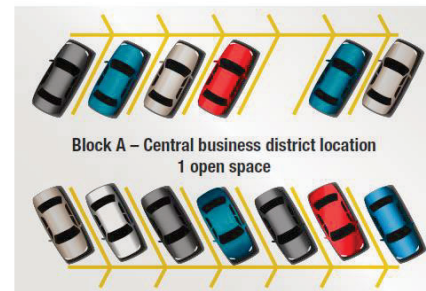
Demand responsive pricing is the idea of managing and pricing on-street parking based on real-time parking demand. Sensor technology offers the advantage of highly accurate information on parking demand. This data can potentially be used to inform price adjustments aimed at optimising parking availability and turnover. For example, in San Francisco, sensor data was used to periodically adjust rates up or down to achieve a target occupancy rate of between 60-85 per cent.

It does this by reducing the cost of parking in quieter streets and increasing the cost of parking in busier street, adjusting pricing according to demands throughout the day and week. An occupancy rate of between 60% and 80% is considered a stable rate where there is at least 1-2 available car spaces in the parking zone at any time.

Before demand responsive pricing



After demand responsive pricing



Source: Gold Coast City Council City Parking Plan (2015)

Within Toowoomba's city centre, there is typically large parking demand toward the city centre core and less demand toward the city centre frame. Therefore, an hourly

parking pricing rate could be implemented, reducing in cost from the city centre core towards the city centre frame.

SF Park, San Francisco – Case Study

A pilot study was undertaken in SF Park, San Francisco in 2011 to test congestion-priced street parking (i.e. DRP). This study aimed to determine whether congestion-priced street parking reduced the number of cars 'cruising for parking'. To conduct this study, kerb parking observations along 50 blocks (both priced and controlled) were carried out at three different times throughout 2011 and 2012. This included observing and noting the average occupancy, parking turnover and duration, vehicle occupancy, non-payment and the amount of time at least one space was available on each block.

The key findings of this study were:

- Drivers saw reduced parking search times
- A 23% reduction in parking infringements/citations
- Increased availability of on-street parking throughout the study area
- 'full' parking lots reduced by 16%
- target occupancy rates of 60%-80% met twice as often
- A 22% reduction in double parked vehicles
- A 30% reduction in greenhouse gas emissions.

Key Action:

- 3-1. Revise paid parking price policy to increase frequency of review period
- 3-2. Monitor parking sensor data and review/adjust parking pricing at street block or zone level to optimise parking occupancy at 85% across the city centre.

3.3.1 Paid Parking

3.3.1.1 Why charge for parking?

When parking is priced, motorists pay directly for the use of parking facilities. Parking pricing is recognised internationally as being an effective way to reduce parking problems as part of a parking management strategy, to reduce transport problems as part of a mobility management strategy, to recover parking facility costs or to raise revenue.

Parking spaces are assets and as such have a value. The space that each car park occupies has a monetary value associated with the opportunity cost of that land. In prime locations, such as Toowoomba City, the value of the land that an on-street parking space occupies may be as much as \$1,100 per square metre. In addition to the cost of the land the space performs a function. It allows the driver to park their vehicle and access facilities, such as shops, offices and restaurants. This convenience and function of the space also has a value. The space also has a maintenance cost.

One of the main objections to priced parking comes from local businesses, which fear that paid parking may drive away customers; however, evidence suggests that customers making moderate to high retail expenditure trips are relatively insensitive to the introduction of pricing. Although convenience trips are more sensitive to pricing, research has confirmed that walkers making convenience trips are more likely to visit more often and spend more in total than people making convenience trips by car. Studies have confirmed that introducing pricing and making streetscape improvements that benefit pedestrians can offset impacts to convenience shoppers. Priced parking and time limits also help to increase turnover, which substantially benefits local business.

Key Actions:

3-3. Convert all free parking in the city core (paid parking zones) to pay parking





3.4 Precinct Parking Plans (KP4)

Understandably a 'one size fits all' parking policy does not suit all locations. It will need to be customised to meet each specific location's characteristics, access and servicing needs, while also moving towards more sustainable access and parking outcomes.

Precinct Parking Plans (PPP) follow the Parking Strategy's goals and objectives but have their own strategies and actions tailored to the specific issues and opportunities for each precinct. The range and scope of PPPs will vary depending on the unique conditions and complexity of the parking issues. Often these locations are on the fringe or outside the city centre, but specific land uses generate high parking demand and turnover. These sites are often encompassed by residential housing which can be impacted by on-street parking and higher traffic volumes.

Potential sites for Precinct Parking Plans include:

- Toowoomba Base Hospital
- St Vincent's Private Hospital
- Queens Park and Botanic gardens

Location specific parking surveys will be needed to understand the different parking generators, issues and impacts. Management options may include reviewing timed parking restrictions, parking restrictions, residential parking schemes, public transport improvements and park n ride.

Key Action:

- 4-1. Develop Precinct Parking Plans (PPPs) for key sites including Toowoomba Base Hospital, St Vincent's Hospital and Queens Park**

3.5 Parking Demand Management (KP5)

Management tools must be carefully calibrated to reflect how and why each stakeholder values car parking as well as their associated travel behaviours within the city centre.

Demand management tools reduce the number of vehicle trips entering and exiting the city centre, without reducing the number of person trips. This in turn reduces the amount of parking supply required for these vehicles. Demand strategies may incentivise behaviours such as the use of alternative transportation; however, it is important to understand that these strategies are best implemented during peak parking periods.

3.5.1 Improve Walking and Cycling Linkages to the City Centre

Over 40,000 residents live within a 5km radius of the city centre and work in the centre. Cycling and walking are important sustainable transport choices for shorter trips. Increasing the number of people walking and cycling to work can significantly benefit the demands on parking not to mention the health, social and environmental benefits.

Active travel (walking and cycling) to the city centre can be further encouraged through progressive improvements of pathway linkages including lighting and street trees for shade.

3.5.2 Increase Public Transport Use

Increasing the number of people using public transport to access the city centre, particularly for work-based trips, can have a significant influence on the parking demand/supply balance. A full bus might carry up to 45 passengers which is the equivalent around 35-40 car parking spaces.

The Toowoomba Sustainable Transport Strategy (STS) has set a public mode share target of 6% by 2031, up from 2% in 2011. The STS states that:

Achieving a 6% public transport mode share target would require an additional 18,000 trips per day to be made by public transport. This would be a significant increase. By 2031 it is projected that almost 45,000 jobs will be located in the Toowoomba CBD and surrounding areas. If only 20% of workers in these areas used public transport the 2031 mode share target could be achieved. Achieving this would however require a significant improvement to public transport to support its use by commuters.

The relationship between parking availability and public transport is intrinsically linked. Significant investment is required to improve public transport to a level to provide greater transport choice and reduce people's reliance on cars for access to the city centre. However, if parking is highly accessible and cheap (particularly all-day parking) in the long-term, people will continue to drive and park in the centre.

3.5.3 Bicycle Parking and Shower Facilities

It has been proven that a popular reason for commuters travelling to work by cycling is that changing from cycling clothing to work clothing is deemed inconvenient. Furthermore, unsafe bicycle parking facilities and fear of theft are also reasons that deter people from travelling by bike. Therefore, bicycle parking, storage and shower facilities should be provided throughout Toowoomba's city centre to provide security and convenience for cyclists; hence, encouraging people to choose this travel mode.

There should be a range of short and long-term bicycle parking facilities provided throughout the city centre to cater for different reasons for travel (i.e. shoppers, residents, workers etc). These parking areas should be resilient to weather conditions (i.e. rain and wind) as well as provide a high level of security.

Another option is for the Council to enlist the support of the private business sector to assist with the funding and possible operation of a Bicycle Centre that provides parking and end of trip facilities (e.g. showers, lockers, towel and clothes laundering service) for paying members of the public. The facility would service commuters and long-stay visitors by bicycle to the city. It will accommodate users whose workplace does not provide adequate end of trip facilities.

3.5.4 Ridesharing Programs (Carpool)

This strategy is commonly targeted at commuters that are not well-served by public transport facilities. These types of programs are typically implemented and organised through local Councils; however, they are able to operate through other communication networks (i.e. social media or notices posted on bulletin boards).

3.5.5 Car-Sharing

This strategy grants people access to a centrally owned and maintained pool of vehicles on a per-hour or per-day basis. This program may reduce the number of vehicle trips taken into and out of the city centre as members are required to undertake all of their trips within a set/reserved timeframe.

3.5.6 Bike Sharing

This strategy is somewhat similar to car sharing, in which bike share programs would provide access to a number of bicycles at different locations throughout the city centre. Providing share bikes at the off-street car parks or near all-day parking on the city fringe, for people to ride the rest of the journey to work, would encourage more parking at these locations and free up parking in the city core.

3.5.7 Electric Charging Facilities

Electric and hybrid vehicles are quieter and can significantly reduce greenhouse gas emissions in comparison to traditional combustion engines. ABD data indicates that the number of electric and hybrid vehicles in Australia is increasing. Opportunities for electric charging stations in off-street car parking facilities will be further explored.

Key Actions:

- 5-1. *Progressively improve pedestrian and cycling pathway linkages into the city centre*
- 5-2. *Install and maintain cycle parking facilities to promote and enable cycling, and encourage end of trip facilities in all new developments*
- 5-3. *Lobby state-government for increase public transport services to the city centre*
- 5-4. *Investigate potential park and ride remote sites for rideshare (carpooling)*
- 5.5. *Investigate options for a bikeshare scheme*
- 5.6. *Develop a Policy regarding the provision of publicly available electric car charging facilities*



3.6 Development Parking (KP6)

Council controlled on-street and off-street parking makes up only a portion of the parking supply in most centres. The balance of parking is provided for privately in developments for residents, visitors, staff parking, customer parking and deliveries. Development parking therefore has a significant influence on transport access, amenity and traffic impacts of a centre.

Car parking rates for development have remained relatively unchanged for the past two decades. Furthermore, these rates consider land use in isolation and do not factor in cross-utilisation of parking, temporal distribution of parking demand and a high level of self-containment resulting from the mix of uses.

Parking rates for development should be periodically reviewed so that the quantity of parking provided by development matches the demand generated by that development. With greater knowledge and understanding, some geographic (or other) basis for change may also be introduced.

There has been a global shift towards a 'sharing economy' in recent years. This sharing economy facilitates the sharing and use of unused or underutilised assets or services. Examples of a shared economy include Airbnb and Uber. The decoupling of parking spaces from individual lots could support the expansion of this practice. This allows parking requirements to be fulfilled off-site, potentially in collaboration with land-owners or Council. This disassociates the provision of parking from geometric constraints and supports more efficient shared parking outcomes.

Local business groups have expressed strong support for Council to provide guaranteed long term or leased parking. Council has in the past offered discounted prepaid monthly tickets on a no guaranteed space basis. Subject to availability of spaces, a move towards guaranteed parking would benefit local business and increase parking revenue for the city.

Key Action:

- 6-1. *Periodically review development parking rates to manage development impacts*
- 6-2. *Engage with the development industry, property owners and the community to maintain the role of private parking in a centre, location or destination.*
- 6-3. *Further investigate decoupling of parking for non-residential developments in the city centre.*
- 6-4. *Investigate vehicle and car share parking requirements for new developments*
- 6.5 *Move towards the implementation of providing guaranteed car parking in Council's off-street parking facilities where these spaces are underutilised.*

KEY ACTIONS



Toowoomba City Centre Car Parking Strategy

Project: P3675

Version: 001

REF #	Key Actions:	Indicative Implementation Timeframe					
		2019-20	2020-21	2021-22	2022-23	2023-24	Ongoing
Strategic Parking Management							
1-1	Adopt centre parking hierarchy	◆	◆				
1-2	Prioritise parking based on highest benefit and user needs		◆	◆			◆
1-3	All on-street parking in the 5-6minute walking catchment will be paid parking and time-limited to between 1 hour and 3 hours				◆	◆	
1-4	All parking within the 10minute walking catchment will be paid parking				◆	◆	
1-5	Set target level of service for public parking at 85% occupancy for on-street and 90% for off-street				◆	◆	◆
Parking Technology							
2-1	Roll-out new parking meters across the city-centre, starting with the “paid parking” zone			◆	◆		
2-2	Expand the existing parking sensor deployment across the city centre, commencing with the designated short-stay parking zone, and paid parking zone. Further expand parking sensor to the 3P traffic area, as funding permits				◆	◆	
2-3	Facilitate online tools and smart phone apps to help customers pre-plan and manage their parking				◆	◆	
2-4	Roll-out smart parking signage to all off-street parking facilities in the city centre				◆		
Demand Responsive Parking Pricing							
3-1	Revise paid parking price policy to increase frequency of review period		◆				
3-2	Monitor parking sensor data and review/adjust parking pricing at street block or zone level to optimise parking occupancy at 85% across the city centre				◆	◆	◆
3-3	Convert all free parking in the city core (paid parking zones) to pay parking			◆			
Precinct Parking Plans							
4-1	Develop Precinct Parking Plans (PPPs) for key sites including Toowoomba Base Hospital, St Vincent’s Hospital and Queens Park		◆	◆			

REF #	Key Actions:	Indicative Implementation Timeframe					
		2019-20	2020-21	2021-22	2022-23	2023-24	Ongoing
Parking Demand Management							
5-1	Progressively improve pedestrian and cycling pathway linkages into the city centre	◆	◆				◆
5-2	Install and maintain cycle parking facilities to promote and enable cycling, and encourage end of trip facilities in all new developments		◆	◆	◆		
5-3	Lobby state-government for increase public transport services to the city centre			◆	◆		◆
5-4	Investigate potential park and ride remote sites for rideshare (carpooling)				◆	◆	
5-5	Investigate options for a bikeshare scheme		◆	◆			
5-6	Develop a Policy regarding the provision of publicly accessible electric car charging facilities			◆			
Development Parking							
6-1	Periodically review development parking rates to manage development impacts	◆		◆		◆	◆
6-2	Engage with the development industry, property owners and the community to maintain the role of private parking in a centre, location or destination		◆				
6-3	Further investigate decoupling of parking for non-residential developments in the city centre		◆	◆			
6-4	Investigate vehicle and car share parking requirements for new developments			◆			
6-5	Move towards the implementation of providing guaranteed car parking in Council's off-street parking facilities where these spaces are underutilised				◆	◆	

